

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of allocating upstream resources to a plurality of cable modems, comprising:

grouping the plurality of cable modems into a plurality of groups based on quality of service requirements of each of the cable modems;

ordering allocation of said upstream resources to each of the plurality of cable modems based on the group to which each of the cable modems belongs; and

allocating said upstream resources to each of the cable modems based on the ordering.

2. (canceled)

3. (previously presented) The method of claim 1, wherein allocating said upstream resources comprises:

assigning initialization channels of the upstream resources to each of the plurality of cable modems based on the grouping of the plurality of cable modems.

4. (previously presented) The method of claim 1, wherein allocating said upstream resources comprises:

assigning registration channels of the upstream resources to each of the plurality of cable modems based on the grouping of the cable modems.

5. (original) The method of claim 1, wherein a first group of the plurality of groups comprises message transferring agents.

6. (previously presented) The method of claim 1, further comprising:
designating a first group of the plurality of groups as requiring said allocation of upstream resources before other groups of the plurality of groups.

7. (previously presented) The method of claim 6, further comprising:
designating a second group of the plurality of groups as being said allocated upstream resources subsequent to the first group.

8. (currently amended) A cable modem termination system (CMTS), comprising:
a memory configured to store instructions; and
a processing unit configured to execute the instructions in the memory to:
group a plurality of cable modems (CMs) into a plurality of groups
based on quality of service requirements of each of the cable modems,
re-boot the CMTS, and
determine an order for allocating upstream resources to each of the plurality of CMs based on the group to which each of the CMs belongs.

9. (canceled)

10. (previously presented) The system of claim 8, wherein the processing unit is further configured to execute the instructions in the memory to:

allocate initialization channels of the upstream resources to each of the plurality of CMs based on the grouping of the plurality of CMs.

11. (previously presented) The system of claim 8, wherein the processing unit is further configured to execute the instructions in the memory to:

allocate registration channels of the upstream resources to each of the plurality of CMs based on the grouping of the CMs.

12. (original) The system of claim 8, wherein a first group of the plurality of groups comprises message transferring agents.

13. (previously presented) The system of claim 8, wherein the processing unit is further configured to execute the instructions in the memory to:

designate the first group of the plurality of groups as requiring the allocation of upstream resources before other groups of the plurality of groups.

14. (previously presented) The system of claim 13, wherein the processing unit is further configured to execute the instructions in the memory to:

designate a second group of the plurality of groups as being said allocated upstream resources subsequent to the first group.

15. (original) A method of allocating upstream resources in a cable modem system, comprising:

receiving upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems;

determining an order that the upstream resources are to be assigned to each of the plurality of cable modems based on the address of each of the resource requests; and

allocating the upstream resources based on the determined order.

16. (original) The method of claim 15, wherein the address comprises a medium access control (MAC) address.

17. (original) The method of claim 15, further comprising:

grouping the plurality of cable modems into a plurality of groups.

18. (previously presented) The method of claim 17, wherein ordering the allocation of upstream resources comprises allocating the upstream resources to each of the plurality of cable modems based on a group of the plurality of groups to which each of said cable modems belongs.

19. (previously presented) The method of claim 17, wherein the grouping of the plurality of cable modems comprises grouping the plurality of cable modems into the plurality of groups based on quality of service requirements of each of the cable modems.

20. (original) A cable modem termination system, comprising:

a memory configured to store instructions;

a communication interface configured to receive upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems; and

a processing unit configured to execute the instructions in the memory to:

determine an order for allocating upstream resources to each of the plurality of cable modems based on the address of each of the resource requests.

21. (original) The system of claim 20, wherein the address comprises a medium access control (MAC) address.

22. (original) The system of claim 20, wherein the processing unit is further configured to execute the instructions in the memory to:

group the plurality of cable modems into a plurality of groups.

23. (original) The system of claim 20, wherein the processing unit is further configured to execute the instructions in the memory to:

allocate the upstream resources to each of the plurality of cable modems based on a group of the plurality of groups to which each cable modem belongs.

24. (previously presented) The system of claim 22, wherein the processing unit is further configured to execute the instructions in the memory to:

group the plurality of cable modems into the plurality of groups based on quality of service requirements of each of the cable modems.

25. (previously presented) A method of initializing cable modems subsequent to a cable modem termination system re-boot, comprising:

receiving initial upstream channel requests from a plurality of said modems;
retrieving first data from each of the requests; and
determining an order in which to assign upstream channels to each of the plurality of modems based on the retrieved first data.

26. (original) The method of claim 25, wherein the first data comprises a medium access control (MAC) address.

27. (original) The method of claim 25, further comprising:

grouping the plurality of modems into a plurality of groups.

28. (original) The method of claim 27, wherein grouping the plurality of cable modems comprises grouping the plurality of modems into the plurality of groups based on quality of service requirements of each of the modems.
29. (original) The method of claim 27, wherein a first group of the plurality of groups comprise message transferring agents.
30. (previously presented) The method of claim 27, further comprising:
designating a first group of the plurality of groups as requiring allocation of upstream resources before other said groups of the plurality of groups.
31. (previously presented) The method of claim 30, further comprising:
designating a second group of the plurality of groups as being allocated said upstream resources subsequent to the first group.
32. (canceled)
33. (canceled)
34. (previously presented) A system for allocating upstream resources to a plurality of cable modems subsequent to a cable modem termination system (CMTS) re-boot, comprising:
means for grouping the plurality of cable modems into a plurality of groups; and

means of identifying an order, subsequent to the CMTS re-boot, that said upstream resources are to be allocated to each of the plurality of cable modems based on the group to which each of the cable modems belongs.